

# ECONOMIC PERSPECTIVE

## ARE THERE LOCAL LABOUR MARKETS IN SCOTLAND?\*

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### 1. Changing labour markets

In commenting in July 1995 on the end of the ASLEF strike, *The Economist* remarked "Taking public- and private- sector companies together, around half of British employees now have their pay and conditions affected by collective bargaining, compared with three-quarters 20 years ago" and stated "Even where bargaining is still collective, it happens down the line ... in 1990, the authoritative Workplace Industrial Relations Survey ... showed that of every five workers on whose behalf collective bargaining still took place, only one was covered by a national deal. Four were covered by deals for each individual firm. Even company-wide bargaining is breaking down as firms settle pay and conditions at the workplace level, or for particular groups of employees within each workplace."<sup>1</sup>

In fact, the trends are not quite as simple as *The Economist* article implied but its overall thrust is clearly right. Metcalf (1994) pointed out in a paper prepared for a 1993 conference that "No consensus exists concerning the extent and consequences of change in industrial relations in the last decade or so. There is no doubt that there has been a transition away from the traditional system, although towards what is unclear."<sup>2</sup> In particular, Metcalf would take issue with *The Economist's* assertion that the move is to workplace bargaining either *de jure* in institutional form or *de facto* in where decisions are actually taken. However, he agrees with Millward et al (1992) that since 1979 "Government policy, both through its dealings with its own employees and through persuasion and advocacy to other employers, encouraged a move away from national, multi-employer pay settlements towards more locally determined ones which were sensitive to local labour markets and the circumstances of the employer"<sup>3</sup> and on his own behalf Metcalf goes on to comment "The objective has been accomplished."<sup>4</sup>

### 2. Long-term evidence for Scotland

It seemed to us that if there was indeed an increasing trend towards local pay bargaining, this might well show up in some evidence for regions in Scotland. So to start with we looked in a fairly superficial way at the evidence for a longish time-period. It is conventional wisdom that in the early and mid 1970s in the UK generally and *a fortiori* in Scotland salaries were determined by national forces, moderated only to a small extent by forces operating in local labour markets. That conventional wisdom was, however, framed in the context of national pay bargaining conducted, on the employees' side, by national unions with significant labour market muscle. Further, it was in a context of limited inter-industry mobility of labour - eg male craft workers and labourers for construction, female workers for distributive services. The combination of the effects of the Thatcher revolution on the powers of trade unions and of technical change on the demands for labour could reasonably be expected to have changed the context. The decline of trade union power and the consequently increased emphasis on local bargaining should mean that there is less strong commonality in movement in salaries in any given industry across the whole of Scotland. Similarly, the decline in, particularly, manual full-time male employment and the expansion of female part-time employment that has occurred in most industries, might well entail that the pigeon-holing of employees by sex and skill into certain occupations, with limited actual or potential inter-industry mobility, is less prevalent. In particular, manufacturing and service industries might well now be recruiting from a common labour market.

So if all this is correct what we would expect to see over time would depend critically on the degree of mobility of labour between regions. If labour moves readily between the regions of Scotland, then pay should be roughly uniform between regions as

labour flow helps to even up the extent of excess supplies and demands in local labour markets. Insofar as labour is immobile, however, there should be increasing divergence over time between regions in earnings as local pay bargaining has its effects.

Of the data available on a continuous basis from the 1970s, unemployment rates seemed to us to be the best indicator of excess supply or demand for labour. We have used annual average data for 9 regions of Scotland, ignoring the islands, for the 23 years from 1971 to 1993, drawing the data from Scottish Abstract of Statistics and Scottish Economic Bulletin. We were interested not so much in the absolute rates of unemployment as in their dispersion, which we measured by their standard deviation. This also enabled us to avoid at least the worst of the problems of changing definitions of how unemployment is measured. It is, however, well known that the dispersion of unemployment rates is sensitive to the absolute rate of unemployment (rising as the unemployment rate rises), so to correct for that in estimating an equation for the standard deviation of unemployment over time we added the absolute level of unemployment in Strathclyde region to our equation. The outcome is equation 1, in which there is a large standard residual (-2.43) for 1987 but which otherwise has entirely satisfactory diagnostics. According to the equation, after eliminating the cyclical effect, the standard deviation of the unemployment rate has risen about 2% a year over the period. Using a cruder way of looking at the data, the rank order of the regions in their unemployment rates is fairly stable: Strathclyde's is the highest for all years except 1993 (when it is second), either Borders or Grampian is always the lowest, Lothian is nearly always 6th or 7th of the 9 regions. The only really discernable trend is for Fife, which moves fairly steadily from about 4th highest in the 1970s and early 1980s to second highest in the late 1980s and 1990s. The evidence so far, we would suggest, is that labour immobility has if anything worsened rather than reduced over since the early 1970s. This may well be explained by the rising female labour market participation.

$$(1) \quad \begin{aligned} \text{SD Unemp} = & -37.7 + 0.0193 \text{ Year} \\ (\text{t-stats}) & \quad (-4.78) \quad (4.82) \\ & + 0.141 \text{ StraUnemp} \\ & (24.95) \\ R^2 = & 98.3\% \end{aligned}$$

In that case, we would expect to see increasing divergence over time in earnings between regions. The only data set for the Scottish regions that is reasonably continuously comparable back to the 1970s is for the average weekly earnings for manual and non-manual full-time adult male employees. For the reasons we have already indicated, this may well be a rather inappropriate measure of pay overall for the 1990s, but we use it *faute de mieux*. Again, our interest is only in dispersion, so we have calculated the standard deviation. In this case, there is a good data set only for 8 regions (the Borders being excluded), and only for the years 1974 and 1976 to 1993<sup>5</sup>. The result is equation 2. We are aware that much can be done to improve this: in particular, we have made no correction for any tendency for the standard deviation to be sensitive to the rate of inflation. From the crude data, the standard deviation of earnings rises quite sharply to 1984, and is relatively constant thereafter. The diagnostics of equation 2 suggest that however sophisticated we made it, we would continue to find that the standard deviation of full-time male earnings between Scottish regions has indeed increased over time. There seem to be stronger regional labour markets in the late 1980s and early 1990s than in the late 1970s and early 1980s.

$$(2) \quad \begin{aligned} \text{SD Av Earn} = & -375 + 0.193 \text{ Year} \\ (\text{t-stats}) & \quad (-5.11) \quad (5.21) \\ R^2 = & 61.5\% \end{aligned}$$

### 3. Local pay changes since 1990

The argument we have presented so far rests on a rather indirect chain of argument, because it draws inferences about markets from very little information of what is actually happening. For recent years, there is a much better source of information - the Scottish Chambers of Commerce Business Survey. This survey has been running for many years, with the main results published quarterly. Its format is to ask respondents to report on their experiences over the previous quarter and their expectations for the next quarter. The main analysis so far conducted from the evidence is to generate measures of business confidence, by drawing on the responses about the degree of optimism to calculate the net proportion expecting better times, compare with the previous quarter's survey, and conclude that business confidence is rising or falling. Like the CBI survey, this analysis has for years generated quarterly headlines in the business pages of the Scottish press. The

survey was, however, radically changed in 1990, and for the period from the third quarter of 1990 there is a vast amount of economic information in the survey which has so far not been systematically analysed. In particular, there is a lot of information which in principle bears on the operation of labour markets.

The survey reports results for six Chambers, whose brief area designations are Aberdeen, Central, Dundee, Edinburgh, Fife and Glasgow, and for the whole of Scotland. The Central Chamber area embraces Stirling and Falkirk. The Aberdeen, Dundee, Edinburgh and Glasgow cover not just the cities but their surrounding areas. There is some haziness about the geographical boundaries - for example, a firm in Montrose would normally join the Dundee Chamber, but might join the Aberdeen one - but there is no overlap in that no firm is a member of more than one Chamber. However, the geographical haziness makes it dangerous to try to link with the Chambers data the Scottish Office data for regions within Scotland - eg the unemployment and earnings data we have been briefly considering. Not all of the firms in any area join the relevant Chamber. The information is disaggregated by industry, into seven industries or industry groups: oil&gas, manufacturing, construction, retailing, wholesaling, financial industries and tourism&leisure. Because not all the firms join any Chamber and because membership tends to vary between industries (with manufacturing and distributive services usually the most strongly represented) there are some data problems. In order to protect confidentiality, information is missing for some Chambers for some industries (often only in one or two surveys). Even in some cases where information is published, it is based on returns from very few firms. There is effectively no information about oil&gas other than for Scotland as a whole. The data published for Scotland as a whole include the observations suppressed at Chamber level to protect confidentiality.

With the caveats we have noted, for each industry and for each Chamber information is collected on business optimism and, in a manner relevant for the industry, on output, capital formation and employment. Fortunately for our purposes, there is a lot of commonality between industries in the employment information gathered. The labour market information, for all industries with minor variants, comprises: trends in total employment (actual and expected), disaggregated into male, female, full-time, part-time, and various categories

of temporary/self-employed/sub-contract staff, trends in actual and expected overtime and short-time working, trends in salaries and in training, and a set of indicators of labour shortages - specifically whether, if the firm has recruited recently, it has had problems in doing so, and if so for what categories of staff, and generally whether there are problems in recruiting or in retaining employees.

In the only work we have completed so far, we have focused on trends in salaries. The information in the surveys told us what proportion of firms had increased salaries in the previous 3 months, and, for those who had increased salaries, what the average percentage increase was. Multiplying these two figures gave an average percentage salary increase for each industry for each Chamber for each quarter: we have called this variable SALIAV, and this is the variable whose behaviour we seek to examine.

We started by inspecting the data with the aid of two elementary calculations. The first examined how strong is the correlation between Chambers for SALIAV in any particular industry, to give an indication of how far the Scottish Chambers were all increasing salaries by the same extent at the same time in any industry: insofar as the industries are homogeneous this should give some indication of the strength of national pay bargaining. The second calculation, the correlation for any particular Chamber between SALIAV for different industries, measures how far in any particular geographical labour market pay was moving in the same way in different industries, and so, insofar as it is possible for workers to move between industries, should show the strength of the local labour market effect.

In calculating these correlations and running the regressions we will describe shortly, we wanted as many observations, with as few gaps, as possible. The work in this paper covers the period from 1990 Q4 to 1995 Q2 - ie 19 quarters.<sup>6</sup> For two Chambers - Central and Fife - there were quite a number of missing observations (for reasons of confidentiality) and some of the published information was based on very few observations. We decided therefore to ignore these two Chambers altogether. There were data problems for two industries - oil & gas, where there is no regional information, and financial industries, where there were a lot of missing observations - so we ignored these industries as well. That left as usable local labour market information four Chambers - Aberdeen, Dundee, Edinburgh and Glasgow - and five industries -

construction, manufacturing, retailing, wholesaling and tourism&leisure. Since the definition of these industries does not correspond to the Standard Industrial Classification (in particular, the SIC does not identify tourism&leisure as an industry) we cannot readily relate the survey evidence to published information at industry level. The combination of this industrial classification issue with the geographical problems discussed earlier entails that the survey data really have to be analysed on their own.

The data of the correlations seemed to us to give some weak prima facie evidence of some action in local labour markets. Of the Chambers, the data are most robust for Glasgow, then Dundee and Edinburgh. The composition of manufacturing probably varies quite a lot between Chambers, so we expected poor associations there. If there was no local labour market at all, we would expect correlations of (or very near to) 1.0 in Table 1 (which analyses the correlations of SALIAV for each industry across Chambers). The data show that the correlations of SALIAV for any particular industry across Chambers are indeed high, but by no means not all 0.9 or more. Turning to the other set of correlations (Table 2), we expected to find weak associations between construction and other industries (because the construction labour force is in general still fairly specific) and strong associations between wholesaling, retailing and tourism&leisure, all of which, we thought, would draw on much the same labour pool. If there were no local labour markets at all, the correlations between industries would be the same in all the Chambers. The data show that the degree to which salaries moved together in different industries varied from Chamber to Chamber (so the Chambers behave differently from each other). In some cases the correlations were fairly high (0.7 or more), suggesting some tendency for different industries to have to, or choose to, increase salaries together.

We interpreted the two tables as suggesting that here, too, was perhaps some indication of strength in local labour markets. So we used the data for SALIAV to examine whether we could reject the hypothesis that all Chambers were like Glasgow and all industries like construction. (We selected Glasgow as the base Chamber because it is the biggest and covers the biggest share of the Scottish labour force, and we selected construction as the base industry because we expected it to be most independent of the others). We conducted our analysis this using dummies for each Chamber and each industry. So we worked with a file of our

380 observations of SALIAV (19 observations each for 4 Chambers each with 5 industries). This was a mixture of cross-section and time-series information. In order to eliminate macroeconomic effects of the stage of the cycle on the time-series for SALIAV, we added both Time and Time-squared to our equation. The result is equation 3, whose diagnostics are all satisfactory. (When we ran the equation without the Time and Time-squared variables, the fit was of course much worse, but the parameters we were interested in, on the Chambers and industries, changed only slightly.)

$$\begin{aligned}
 (3) \quad \text{SALIAV} = & 3.90 + 0.29 \text{ Who} \\
 & (t\text{-stats}) \quad (20.54) \quad (2.35) \\
 & + 0.26\text{Tour} + 0.21 \text{ Ret} + 0.37 \text{ Manu} \\
 & (2.11) \quad (1.70) \quad (3.02) \\
 & + 0.17 \text{ Abdn} + 0.20 \text{ Dun} \\
 & (1.54) \quad (1.79) \\
 & - 0.04 \text{ Edin} - 0.42 \text{ Time} + 0.01 \text{ Time}^2 \\
 & (-0.40) \quad (-12.83) \quad (9.34) \\
 R^2 = & 51.9\%
 \end{aligned}$$

We then adopted the Restricted Least Squares technique, using F-test statistics as the diagnostic, to examine whether the Chambers and the industries really were different from each other. For example, since the coefficients for Aberdeen and Dundee were very close to each other, we tried imposing the restriction that they were the same. Similarly, since the coefficient for Edinburgh is close to zero (the implied coefficient for Glasgow), we tried imposing the restriction that they were the same. Since in fact we found from the F-test that we could reject neither restriction, we then tried to see if Aberdeen/Dundee were significantly different from Edinburgh, from Glasgow, or from Edinburgh/Glasgow. Similarly, we tested to establish whether each of our five industries was significantly different from the others in its behaviour of SALIAV. Because this technique is sensitive to the order in which the restrictions are imposed, we tried all plausible versions of the order: Chambers first, industries first, parameters closest to each other first and at each stage checked back by using the F-statistic to compare our restricted with the original specification.

The outcome was robust to all these checks. In terms of industries, SALIAV in construction behaves differently from SALIAV in all other industries, we cannot reject the restriction that

SALIAV behaves identically in retailing, in wholesaling and in tourism & leisure, and it is ambiguous whether its behaviour in manufacturing is identical to that in the retailing/wholesaling/tourism & leisure. The conclusions here conform to our expectations based on the homogeneity of the nature of labour required by these service industries. In terms of Chambers, SALIAV appears to behave in the same way in Aberdeen and Dundee, in Edinburgh and Glasgow, but differently between Aberdeen/Dundee and Edinburgh/Glasgow. The division of Scotland into distinct labour markets conforms to our expectations. This pairing of cities seems plausible in terms of geographical proximity. Our preconception, however, was that Aberdeen and Dundee would each be sui generis rather than similar to each other.

#### 4. Conclusion

The data do not permit definitive analysis of local labour markets. All the evidence presented in this paper has limitations, not least that it does not give us direct evidence about pay bargaining processes. It appears, however, that the various strands we have identified might weave into a coherent pattern. We have found that over the last twenty years or so, labour mobility within Scotland has at best not increased and might have declined a little. During the 1980s and early 1990s, pay divergences between the regions of Scotland for at least one category of labour have widened. Looking in more detail at the 1990s, it appears from the Scottish Chambers survey that the Scottish cities and surrounding areas in fact constitute two distinct labour markets - Aberdeen/Dundee and Edinburgh/Glasgow. As the next stage of this research, we propose to use the Chambers survey evidence to examine the determinants of the movement of SALIAV in our two labour markets. It must, however, be remembered that local labour markets are indeed local, with perhaps minimal information in each about conditions in neighbouring markets - we can hardly expect them to conform neatly to our economic models.

#### NOTES

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1. Both quotations are from *The Economist* 29 July 1995, page 21
2. Page 126
3. Page 217
4. Page 137
5. The publications containing the data indicate that there may be sampling problems for several regions for 1975, and since the data for that year do indeed seem odd we omitted 1975 altogether.
6. Although the survey was broadly in its present form in 1990Q3, that quarter's survey did not contain the information to let us calculate SALIAV.

#### REFERENCES

- Metcalf D (1994) "Transformation of British industrial relations? Institutions, conduct and outcomes 1980-1990" pp 126-157 in ed Ray Barrell *The UK Labour Market: Comparative and Institutional Developments* Cambridge UP for National Institute of Social and Economic Research.
- Millward N, Stevens M, Smart D and Hawes W (1992) *Workplace Industrial Relations in Transition* Aldershot, Dartmouth.

**Table 1** Correlations of SALIAV, each industry, for the 4 Chambers

**RETAILING**

	Aberdeen	Dundee	Edinburgh
Dundee	0.909		
Edinburgh	0.743	0.865	
Glasgow	0.913	0.858	0.703

**WHOLESALE**

	Aberdeen	Dundee	Edinburgh
Dundee	0.710		
Edinburgh	0.626	0.731	
Glasgow	0.739	0.811	0.779

**MANUFACTURING**

	Aberdeen	Dundee	Edinburgh
Dundee	0.883		
Edinburgh	0.671	0.749	
Glasgow	0.914	0.857	0.792

**CONSTRUCTION**

	Aberdeen	Dundee	Edinburgh
Dundee	0.815		
Edinburgh	0.810	0.804	
Glasgow	0.671	0.880	0.620

**TOURISM & LEISURE**

	Aberdeen	Dundee	Edinburgh
Dundee	0.819		
Edinburgh	0.697	0.445	
Glasgow	0.790	0.709	0.769

**Table 2****Correlations of SALIAV, each Chamber, different industries****ABERDEEN**

	Retail	Wholesale	Manuf	Constr
Wholesale	0.272			
Manufacturing	0.430	0.688		
Construction	-0.030	0.566	0.586	
Tourism	0.665	0.605	0.730	0.474

**DUNDEE**

	Retail	Wholesale	Manuf	Constr
Wholesale	0.682			
Manufacturing	0.504	0.774		
Construction	0.475	0.639	0.721	
Tourism	0.641	0.424	0.697	0.751

**EDINBURGH**

	Retail	Wholesale	Manuf	Constr
Wholesale	0.557			
Manufacturing	0.532	0.802		
Construction	0.385	0.643	0.616	
Tourism	0.861	0.365	0.463	0.196

**GLASGOW**

	Retail	Wholesale	Manuf	Constr
Wholesale	0.721			
Manufacturing	0.687	0.744		
Construction	0.488	0.680	0.727	
Tourism	0.553	0.494	0.762	0.599